

CLAIMS

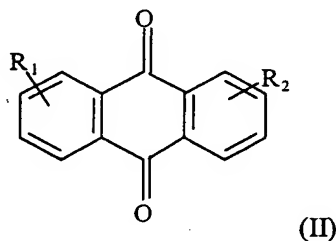
1. Fluoropolymer-based coating material in tape or varnish form suitable for laser marking and containing as additive from 0.5% to 5% by weight of at least one polyimide comprising repeating units which include at least one group Ar-X-Ar', in which Ar and Ar' represent independently an optionally substituted monovalent or divalent aryl group and X represents a -CO- or -S- group, the said polyimide being essentially free from heteroatoms or heteratomic groups other than -S- and other than the imide groups.
2. Material according to Claim 1, wherein at least 50%, and in particular at least 60% of the units of the said polyimide include at least one group Ar-X-Ar'.
3. Material according to Claim 1 or 2, having at least one of the following features:

- the said -CO- group is present in a divalent or tetravalent group of formula I

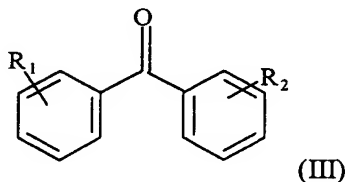


where Ar and Ar' represent each independently an optionally substituted monovalent or divalent aryl group;

- the said -CO- group is present in a divalent or tetravalent aromatic group of formula II or III



(II)

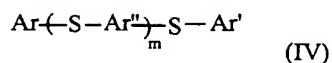


(III)

where R₁ and R₂ represent independently H or one or more substituents.

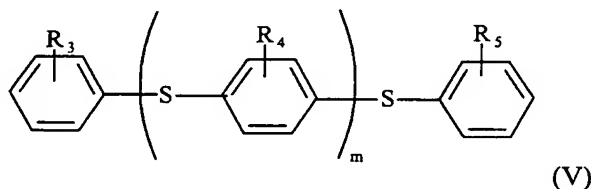
4. Material according to any one of the preceding claims, having at least one of the following features:

- the said -S- group is present in a divalent or tetravalent aromatic group of formula IV

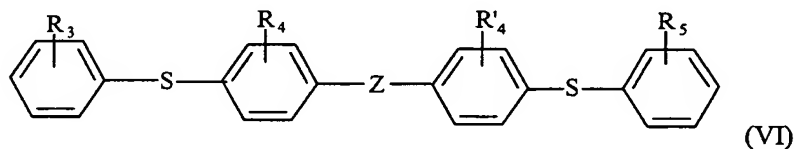


in which Ar and Ar' each represent a monovalent or divalent aryl group, Ar'' is an arylene group, m is the number zero or an integer 1 or 2, and the groups Ar, Ar' and Ar'' are optionally substituted;

- the said -S- group is present in a divalent or tetravalent aromatic group of the formula V

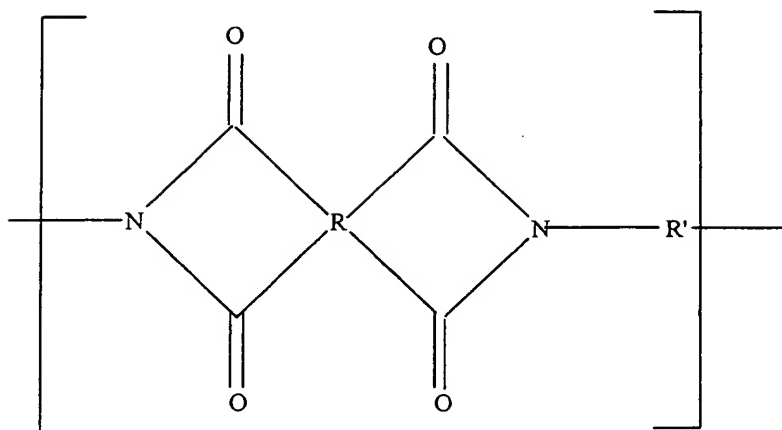


in which R₃, R₄ and R₅ represent independently H or one or more substituents and m is a number 0, 1 or 2,
or of formula VI



in which R₃, R₄ and R₅ are defined as above, and R'₄ represents H or one or more substituents, and Z represents a covalent bond or a -CH₂-, -CH(CH₃)- or -C(CH₃)₂- group.

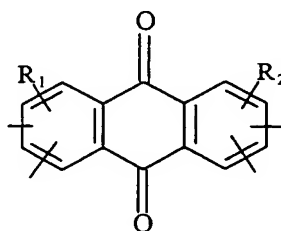
5. Coating material according to one of the preceding claims, wherein the polyimide includes units of formula VII



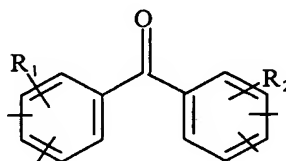
(VII)

in which R represents an optionally substituted tetravalent aromatic group and R' is an optionally substituted divalent aromatic group, and in which at least one of the groups R and R' includes at least one group Ar-X-Ar' as defined in any one of the preceding claims.

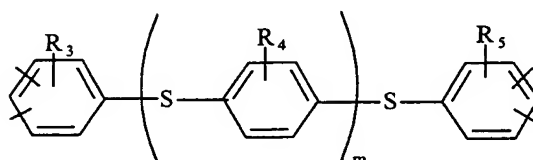
- 5 6. Material according to Claim 5, wherein R represents at least one of the tetravalent groups of formula IIa, IIIa, Va or VIa



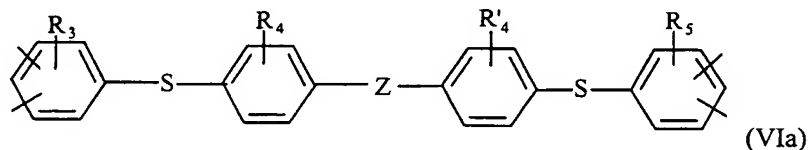
(IIa)



(IIIa)

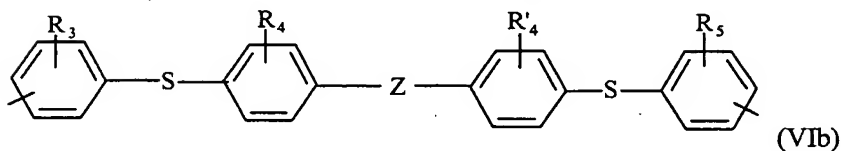
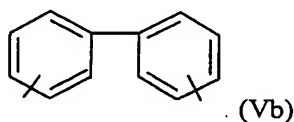
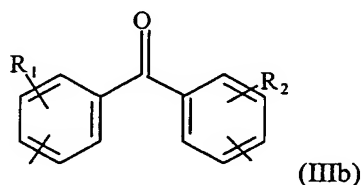
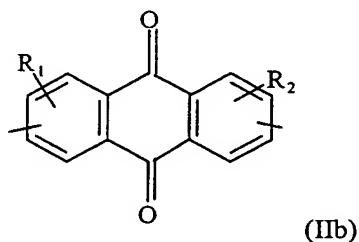


(Va)



where R_1 , R_2 , R_3 , R_4 , R_5 and R'_4 represent independently H or one or more substituents, Z represents a covalent bond or a $-\text{CH}_2-$, $-\text{CH}(\text{CH}_3)-$ or $-\text{C}(\text{CH}_3)_2-$ group, and the free valencies are positioned ortho with respect to one another.

- 5 7. Material according to either of Claims 5 and 6, wherein R' represents at least one of the divalent groups of formula IIb, IIIb, Vb or VIb



10 where R_1 , R_2 , R_3 , R_4 , R_5 and R'_4 represent each independently H or one or more substituents, and Z represents a covalent bond or a $-\text{CH}_2-$, $-\text{CH}(\text{CH}_3)-$ or $-\text{C}(\text{CH}_3)_2-$ group.

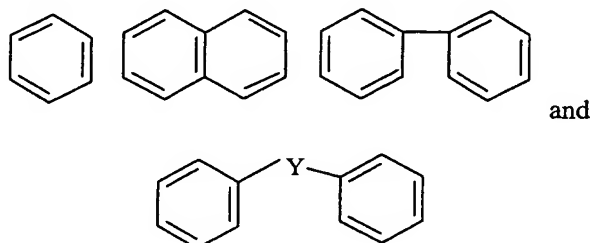
- 15 8. Material according to any one of Claims 5 to 7, wherein either the groups R, or the groups R' include groups $\text{Ar-X-Ar}'$ as defined in any one of Claims 1 to 4, and the other groups (either R' or R, as appropriate) do not contain such groups.

9. Material according to Claim 8, wherein the said other groups are divalent (in the case of R') or tetravalent (in the case of R) aromatic groups containing cyclic groups

derived from benzene or from naphthalene, which are optionally substituted by halogens, lower alkyls and lower haloalkyls.

10. Material according to Claim 9, wherein the said other groups have at least one of the following structures:

5



in which Y represents $-\text{CH}_2-$, $-\text{CH}(\text{CH}_3)-$ or $-\text{C}(\text{CH}_3)_2-$ and the rings are optionally substituted by halogens, lower alkyls or lower haloalkyls.

11. Material according to any one of the preceding claims, further containing
10 from 0.5% to 3% of a metal salt or oxide which inhibits electrical arc tracking.

12. Material according to Claim 10, wherein the electrical arc tracking inhibitor is selected from alumina, zinc oxide and zinc borate.

13. Material according to any one of the preceding claims, having at least one of the following features:

- 15
- it further comprises a white or coloured pigment;
 - the fluoropolymer is PTFE;
 - it is in the form of a tape.

14. Manufactured product coated with a material as defined in any one of the preceding claims.

20 15. Use as electrical arc tracking inhibitor in fluoropolymer-based coatings comprising as additive at least one polyimide as defined in any one of Claims 1 to 9 of a filler selected from aluminium, zinc oxide, zinc borate and mixtures thereof.

16. Use according to Claim 15, wherein the said inhibitor is present at from 0.5% to 3% by weight, relative to the weight of the said coating.